

Cumulative Review

For use after Chapters 1–4

Evaluate the expression for the given value of the variable. (1.1)

1. $2x - 1$ when $x = 3$

2. $5 - b$ when $b = 2$

3. $1.1c$ when $c = -10$

4. $\frac{4.2}{x}$ when $x = 2$

5. $\frac{1}{2}x$ when $x = \frac{5}{2}$

6. $\frac{2}{3} - p$ when $p = \frac{1}{9}$

Evaluate the numerical expression. (1.3)

7. $9 \div 3 + 2 \cdot 4$

8. $3 \cdot 4^2 \div 12$

9. $8[(20 - 4) - 6]$

10. $[15 + (3^2 \cdot 2)] \div 11$

11. $\frac{1}{4} \cdot 48 - 3^2$

12. $\frac{1}{5}(8 \cdot 10) + 4$

Write the verbal phrase as an algebraic expression. Use x for the variable in your expression. (1.5)

13. Six more than a number

14. Difference of fifteen and a number

15. Product of two and a number

Find the sum using the rules of addition. (2.2)

16. $-5 + 7$

17. $12 + 30$

18. $17 + 0$

19. $-12 + (-8)$

20. $4.2 + (-3.1) + 5.4$

21. $6.2 + (-1.1) + (-3.4)$

Find the difference. (2.3)

22. $6 - 10$

23. $7 - (-6)$

24. $-2 - (-4)$

25. $\frac{3}{4} - \frac{5}{4}$

26. $-\frac{2}{3} - \frac{1}{3}$

27. $\frac{5}{2} - \frac{1}{4}$

Simplify the variable expression. (2.5)

28. $(-6)(-z)$

29. $2(-b)(-b)(-b)$

30. $-(-y)^2$

31. $|(4)(-z)(-z)(-z)|$

32. $-(x^5)(x)$

33. $\frac{2}{3}(\frac{3}{2}x)$

Find the probability of choosing a red marble from a bag of red and white marbles. (2.8)

34. Number of red marbles: 12
Total number of marbles: 48

35. Number of red marbles: 6
Total number of marbles: 22

Solve the equation. (3.1–3.4, 3.6)

36. $15x - 3 = 48$

37. $4(32 - 2t) = 144$

38. $-(x - 1) = 2(x - 1)$

39. $-2(4.36 - 6.92x) = 13.83x - 2.55$

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For use after Chapters 1–4

Find the unit rate. (3.8)

40. \$1.50 for 4 cans of tuna

41. \$2.10 for $2\frac{1}{2}$ gallons of soda

42. \$189.00 for working 27 hours

43. 5 liters for 4 servings

Find three different ordered pairs that are solutions of the equation. (4.2)

44. $y = 2x - 1$

45. $y = 9 - 3x$

46. $x = \frac{1}{4}$

47. $y = -1$

Use a table of values to graph the equation. (4.2)

48. $y = -x + 2$

49. $y = 3x + 1$

50. $y = -\frac{1}{2}x + 4$

51. $y = -2$

Find the x-intercept and the y-intercept of the line. Graph the equation. Label the points where the line crosses the axes. (4.3)

52. $y = x + 3$

53. $2x + 3y = 9$

54. $y = 2x - 1$

55. $x - 4y = 7$

Plot the points and find the slope of the line passing through the points. (4.4)

56. (2, 3), (4, 1)

57. (-1, -2), (-4, -3)

58. (3, 5), (-2, 5)

59. (7, 2), (-2, -6)

60. (1, -1), (1, 7)

61. $(-\frac{1}{2}, \frac{2}{3}), (\frac{3}{2}, -\frac{4}{3})$

Write the equation in slope-intercept form. Then graph the equation. (4.6)

62. $2y = 4$

63. $2x - 4y = 8$

64. $x + 5y - 1 = 0$

65. $x - y = 0$

Decide whether the graphs of the two equations are parallel lines. Explain your answer. (4.6)

66. $y = 2x + 5, y - 2x = 12$

67. $3x - 4y = 7, y = -\frac{4}{3}x - 5$

In Exercises 68–71, the variables x and y vary directly. Use the given values to write an equation that relates x and y . (4.5)

68. $x = 3, y = 6$

69. $x = -2, y = -4$

70. $x = 21, y = 7$

71. $x = -3, y = -3$

Evaluate the function when $x = 3$, $x = 0$, and $x = -1$. (4.8)

72. $f(x) = 15x - 2$

73. $f(x) = 4x$

74. $f(x) = -8x + 1$

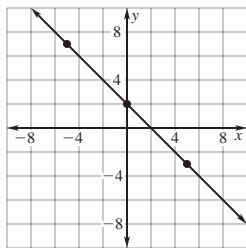
75. $f(x) = \frac{1}{2}x - 3$

Answer Key

Cumulative Review

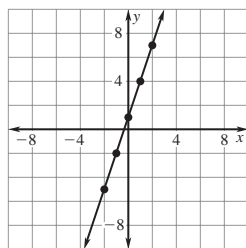
1. 5 2. 3 3. -11 4. 2.1 5. $\frac{5}{4}$ 6. $\frac{5}{9}$
 7. 11 8. 4 9. 80 10. 3 11. 3 12. 20
 13. $x + 6$ 14. $15 - x$ 15. $2x$ 16. 2
 17. 42 18. 17 19. -20 20. 6.5 21. 1.7 22. -4
 23. 13 24. 2 25. $-\frac{1}{2}$ 26. -1
 27. $\frac{9}{4}$ 28. $6z$ 29. $-2b^3$ 30. $-y^2$ 31. $4|z^3|$
 32. $-x^6$ 33. x 34. $\frac{1}{4}$ 35. $\frac{3}{11}$ 36. $\frac{17}{5}$
 37. -2 38. 1 39. 617 40. about \$.38 per can
 41. \$.84 per gallon 42. 7 dollars per hour 43. 1.25 liters per serving
 44. Answers may vary. Sample: $(0, -1)$, $(1, 1)$, $(-1, -3)$ 45. Answers may vary. Sample: $(0, 9)$, $(1, 6)$, $(-1, 12)$ 46. Answers may vary. Sample: $(\frac{1}{4}, 0)$, $(\frac{1}{4}, 1)$, $(\frac{1}{4}, 2)$
 47. Answers may vary. Sample: $(0, -1)$, $(1, -1)$, $(2, -1)$
 48. Answers may vary. Sample:

Input, x	Output, y
-10	12
-5	7
0	2
5	-3
10	-8



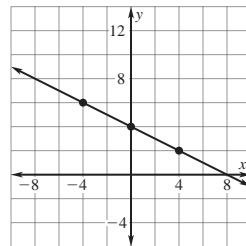
49. Answers may vary. Sample:

Input, x	Output, y
-2	-5
-1	-2
0	1
1	4
2	7



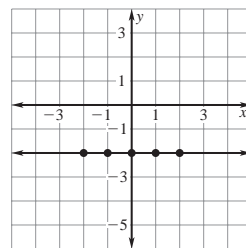
50. Answers may vary. Sample:

Input, x	Output, y
-10	9
-4	6
0	4
4	2
10	-1

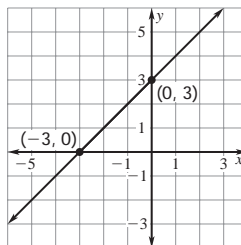


51. Answers may vary. Sample:

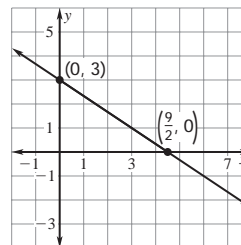
Input, x	Output, y
-2	-2
-1	-2
0	-2
1	-2
2	-2



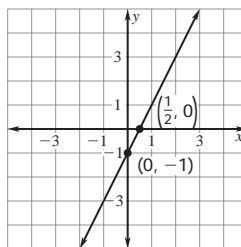
52. x -intercept $= -3$,
 y -intercept $= 3$



53. x -intercept $= \frac{9}{2}$,
 y -intercept $= 3$

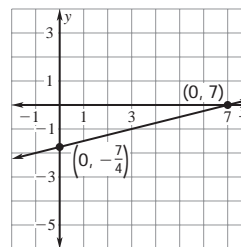


- intercept $= \frac{1}{2}$,
 y -intercept $= -1$

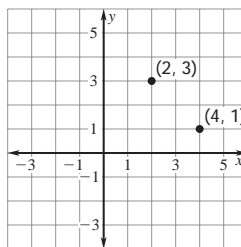


54. x -

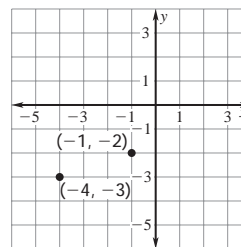
55. x -intercept $= 7$,
 y -intercept $= -\frac{7}{4}$



56. $m = -1$

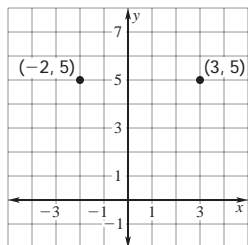


57. $m = \frac{1}{3}$

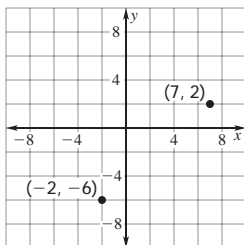


Answer Key

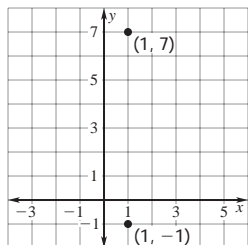
58. $m = 0$



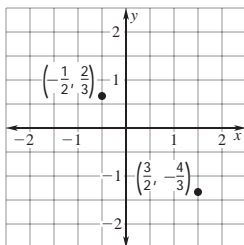
59. $m = \frac{8}{9}$



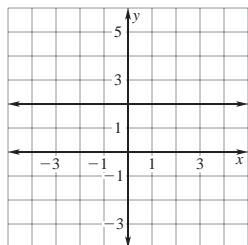
60. m is undefined



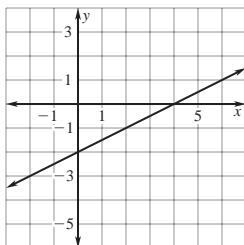
61. $m = -1$



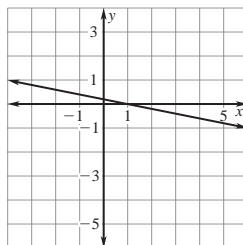
62. $y = 2$



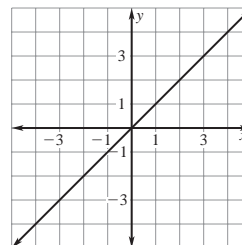
63. $y = \frac{1}{2}x - 2$



64. $y = -\frac{1}{5}x + \frac{1}{5}$



65. $y = x$



66. Yes, both lines have a slope of 2.

67. No, the slopes of the lines are different.

68. $y = 2x$ 69. $y = 2x$

70. $y = \frac{1}{3}x$ 71. $y = x$

72. $f(3) = 43; f(0) = -2; f(-1) = -17$

73. $f(3) = 12; f(0) = 0; f(-1) = -4$

74. $f(3) = -23; f(0) = 1; f(-1) = 9$

75. $f(3) = -\frac{3}{2}; f(0) = -3; f(-1) = -\frac{7}{2}$